

mission on labor disputes (which is composed of an equal number of representatives of the workers and of management). If the employee objects to the decision of the commission, he may appeal to the factory committee (of which the commission is a subordinate unit) and, after that, to a public court. Management can also take the case to a public court if it considers the decision of the factory committee to be illegal. Members of certain occupational groups (including management personnel) can have their disputes settled only by arbitration by the higher administrative organs.

The author found it "a frustrating and dissatisfying experience" to try to reconcile the conflicting Soviet and Western descriptions of the effectiveness of Soviet trade unions in protecting workers' rights, because of the absence of collected relevant data on Soviet practice. She states that on the one hand the general Soviet position is that there are not and cannot be opposing interests between the administration and the workers, and that on the other, "the most common Western position suggests that a dissatisfied labor force is unable to control or influence conditions of work in the absence of independent trade unions."

The fact that, following former party leader Khrushchev's promise, the Soviet trade unions have in recent years been assigned more administrative duties does not necessarily indicate that they have achieved greater independence. It would appear that the regime has decided merely to pass on gradually to the huge trade union apparatus, with its many millions of volunteer unpaid workers, certain administrative (mainly watchdog) functions, with the primary purpose of increasing production.

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ENERGETICHESKIE RESURSY SSSR. Akademiia nauk SSSR. Vol. 1: GIDROENERGETICHESKIE RESURSY. Edited by *A. N. Voznesensky*. Moscow: "Nauka," 1967. 599 pp. Maps. \$8.50. Vol. 2: TOPLIVO-ENERGETICHESKIE RESURSY. Edited by *N. V. Melnikov*. Moscow: "Nauka," 1968. 632 pp. Maps. \$8.50.

This publication reflects the interest of the Soviet Union in her energy resource base and its periodical reappraisal in the light of expanding scientific and technological knowledge as well as changing economic goals. Thus as early as the 1920s a special Commission for the Study of Natural Production Forces (KEPS) examined the economic potential of the Soviet hydro resources, laying down a foundation for an Atlas of the USSR energy resources, which was published in 1933-34. Later, in 1937-38, the Academy Energy Institute published the first comprehensive two-volume report on *Energeticheskie resursy SSSR*.

After World War II the reappraisal of Soviet energy resources was renewed. By 1967 a special Editorial Committee, a prestigious group of scientists and scholars including the Academicians V. A. Kirillin (vice-president of the Academy and chairman of the State Committee on Science and Technology), N. V. Melnikov, the late V. C. Nemchinov, and others, was ready to release the first part of the work in which the foremost Soviet experts in the energy field had participated.

The first volume is devoted to an evaluation of the Soviet surface water resources and their utilization. Its editor, A. N. Voznesensky, directed the initial

stages of inquiry in the Institute for Hydroenergy Projects between 1947 and 1951. In the present book, the analysis is divided into two parts. Part 1 deals mainly with the theoretical questions concerning the hydroenergy potential of the USSR. Evaluation is carried out according to three main criteria: (1) total theoretical energy potential of the respective hydro resource, (2) the part that is harnessable under present technology, and (3) the economically exploitable portion of a technical potential. In this context the total energy potential of the Soviet rivers was estimated at about 450,000 megawatt capacity—that is, about 12 percent of the world total—with an estimated annual output of approximately 4,000 billion kilowatt-hours.

Some attention is paid in a relatively short chapter to the potential contribution of tidal energy, notably in the Murmansk Sea and the Far East. However, for a host of problems, tidal energy is not considered to be of practical value to the Soviet power output in the foreseeable future.

Part 2 of the book considers chiefly the implication of economic factors for the various kinds of hydroenergy utilization, as in a river multiple-purpose development, also water protection, and so forth. The volume concludes with an impressive quantitative survey of the existing hydropower stations as well as those under construction or in different stages of planning. In total, 1,351 hydropower plants (of which 173 were in operation and 30 under construction as of January 1, 1966) are analyzed in great technical detail. Besides an overall review, there is a separate presentation of the data for each economic region and republic.

The second volume examines the Soviet primary mineral fuels—that is, coal, crude petroleum, natural gas, peat, and shale. It opens with Melnikov's appraisal of the total Soviet primary mineral fuel resources in the world context; he claims 55 percent of the world total for the USSR. Then, after having commented on the relation between an overall energy balance and the performance of an economy, he points out that it is mandatory to increase the relative shares of liquid and gaseous hydrocarbons in the Soviet future energy balances to ensure that the long-range goals set in the Party Third Program are met.

A detailed inquiry into the situation of each primary fuel follows. First the resources are examined from the standpoint of geographical distribution, geological conditions, scope of exploration, and degree of certainty with which the deposits were established within the framework of individual economic regions and republics. Then are analyzed the technical and economic factors affecting exploitation of the measured and probable reserves, particularly with an eye to their estimated ability to sustain a planned or prospective industrial and regional economic development.

The analysis of natural gas resources and their utilization is more extensive than of the other fuels. The role of gas in the Soviet economy has been on the rise, reflecting steadily increasing reserves and low cost. Yet gas resources are still only a fraction of those of coal. As of January 1, 1965, the gas reserves in A + B + C categories are listed as on the order of 3.2 trillion cubic meters. This is, expressed in hard coal equivalents, about 4.2 billion tons compared to one trillion tons of the same kind of Soviet reserves in coal. There is no explicit quantitative information on the extent of Soviet oil resources, although some idea of it may possibly be derived from the authors' discussion on a prospective average yield of the oil-bearing strata. Obviously, the true state of oil resources remains on the Soviet secret list.

In concluding, we may point out that the estimates of reserves depend heavily

on assumptions about available technical capability and the selection of criteria for determining exploitable deposits. In this respect the Soviet primary energy reserves may be overstated as compared to those of the West, where the role of market forces may prevent resources in faraway locations or lying at great depth from being included in the reserves category. With this reservation in mind, it should, however, be acknowledged that both volumes represent first-class work, rich in quantitative data, and offering a penetrating analysis of the scope and structure of the Soviet energy resource basis. Both volumes deserve to be translated in their entirety.

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DIE LANDWIRTSCHAFTLICHEN BETRIEBSGRÖSSEN IN DER SOWJETUNION IN STATISTIK UND THEORIE. By *Ivan Lončarević*. Osteuropastudien der Hochschulen des Landes Hessen Reihe I, Giessener Abhandlungen zur Agrar- und Wirtschaftsforschung des Europäischen Ostens, vol. 45. Wiesbaden: Otto Harrassowitz, 1969. 184 pp. DM 26, paper.

A decade ago the late Lazar Volin observed that throughout the collectivization of Russian agriculture there had been no studies of the optimum size of farm. This can no longer be said. After the resurrection of the All-Union Institute of Agricultural Economics in 1955 (Stalin closed its predecessor in 1935), numerous Soviet studies have dealt with the size-of-farm problem.

The size peak was reached for state farms in 1962; since that date there has been a 32 percent decline in average sown area per state farm, to 6,900 hectares in 1967. Sown area per collective farm has remained virtually unchanged since 1962, at about 2,800 hectares. Paralleling this stabilization or reduction in farm size, the Soviet professional literature reflects an increasing concern with size problems. The concern is less with overall size, which remains a highly charged political question, than with optimum size for managerial subunits: "departments" for state farms and "complex brigades" for collective farms.

Lončarević describes in detail the procedures by which Soviet agricultural economists build their concept of optimum size. The outcome is closely related to the optimal size (and number) of worker settlements per farm. This in turn is a function of economies in supplying social and cultural services, and diseconomies resulting from increased internal transport costs as settlement size increases.

A major limitation on Soviet calculations of optimum farm size is the absence of an interfarm market for livestock feed. Each unit must rely primarily on its own feed supply. Given administered prices and state procurement contracts, any feed available "above the plan" can be sold for premium prices. This discourages interfarm sales and retards specialization. If a market structure of farm-level prices ever emerges in the Soviet Union, the question of optimum size of farm will appear in a different light.

Lončarević's survey of the literature through 1967 is the best available appraisal in a non-Russian language of current Soviet thought on this topic.

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